

ABSTRACT

In an electron tube (1), one end of an insulating tube (9) is protruded toward the inside of an envelope (2), and an avalanche photodiode (APD) ~~APD (15)~~ is provided on the one end of the insulating tube (9). Another end of the insulating tube (9) is connected to an outer stem (6) of the envelope (2). Alkali sources (27,27) are provided inside the envelope (2). The alkali sources (27,27) are disposed inside the envelope (2) and generates alkali metal vapor to thereby form a photocathode (11) on a predetermined part of the internal surface of the envelope (2). The alkali sources (27) and insulating tube (9) are isolated from each other by a separating member (21', 23', 26). When the electron tube (1) is manufactured, the alkali metal vapor that is generated from the alkali sources (27) is not deposited on the insulating tube (9) due to existence of the separating member (21', 23', 26). This prevents voltage resistance between the envelope (2) and APD (15) from being decreased and the electrical field in the electron tube (1) from being adversely affected, thereby preventing incident efficiency of electrons to the APD (15) from being decreased.